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ANION PHOTOELECTRON IMAGING SPECTROSCOPY OF REACTION INTERMEDIATES IN THE OZONOLYSIS OF ISOPRENE

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Ozonolysis of volatile organic compounds is one of the principle oxidative reactions in the atmosphere. Such reactions are known to produce hydroxyl radical, as well as secondary organic aerosols.[a] Isoprene is the most abundant non-methane hydrocarbon in the troposphere, and is thought to be a nighttime source of hydroxyl radical in densely vegetated areas.[b] We "tag" unstable radical species with an electron in order to study their molecular identities and low-lying electronic structures via mass spectrometry and anion photoelectron spectroscopy. We will present photoelectron spectra of products of isoprene ozonolysis at 2.33 and 3.49 eV, along with quantum chemical calculations of several reaction intermediates that are formed via ozonolysis of isoprene.

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[a]Guenther, A. *et al. J. Geophys. Res.* **1995**, *100*, 8873–8892.
[b]Gutbrod, R. *et al. J. Am. Chem. Soc.* **1997**, *119*, 7330-7342.